

Date: Sat, 18 Sep 93 04:30:12 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #51
To: Ham-Ant

Ham-Ant Digest Sat, 18 Sep 93 Volume 93 : Issue 51

Today's Topics:

 "Crossed Drooping Dipole"
 Ham-M Rotor Control Box
 hamstick antenna (2 msgs)
 Horizontal Loops (4 msgs)
 Kill the Rubber Duck!
 mininec3 manual required (2 msgs)
 When phones transmit (Was Health Risks)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Wed, 15 Sep 1993 20:02:59 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!xlink.net!math.fu-berlin.de!
XALT%convax.iar.nrc.ca@network.ucsd.edu
Subject: "Crossed Drooping Dipole"
To: ham-ant@ucsd.edu

Hello:

Does anyone have any experience with or have any references to crossed drooping
dipoles ? Inverted-V crossed dipoles ?

I am interested in WxSat reception on 137 MHz VHF.

Thanks,

Jim

Date: 17 Sep 93 20:44:28 GMT
From: ogicse!hp-cv!hp-pcd!hpspkla!dubner@network.ucsd.edu
Subject: Ham-M Rotor Control Box
To: ham-ant@ucsd.edu

Danny Stone (dstone@bnr.ca) wrote:
: I have a Ham-M rotor but no control box for it. Does anyone
: have a Ham-M Control box available for sale, trade, free,
: etc. ???

If you can't find one, perhaps you would like to build one. It's really pretty simple as it uses 28 VAC at a couple of amps (working from memory) and three momentary contact switches to control the motor and braking. The indicator is simply a milliammeter and a Zener-regulated supply; the rotator itself supplies the positioning pot.

If you would like it, I'll fax you a two page copy of the schematic and parts list from the owner's manual.

73,
Joe, K7JD

Joe Dubner K7JD | Hewlett-Packard Company | dubner@spk.HP.COM
 | PO Box 2500 M.S. 2I |
 | Spokane, WA 99220-2500 | (509) 921-3514

Date: 16 Sep 1993 19:31:07 GMT
From: gatech!news-feed-2.peachnet.edu!concert!samba.oit.unc.edu!not-for-mail@uunet.uu.net
Subject: hamstick antenna
To: ham-ant@ucsd.edu

I am thinking of going HF mobile again and I have heard tell of a lightweight mobile antenna called the hamstick. Does anyone know anything about it? Who makes it, is it any good, etc.

73/Ian WY3W
Ian.Cassell@launchpad.unc.edu

--

The opinions expressed are not necessarily those of the University of North Carolina at Chapel Hill, the Campus Office for Information Technology, or the Experimental Bulletin Board Service.
internet: laUNCHpad.unc.edu or 152.2.22.80

Date: 17 Sep 1993 09:53:58 -0700
From: news.service.uci.edu!paris.ics.uci.edu!safety.ics.uci.edu!not-for-mail@network.ucsd.edu
Subject: hamstick antenna
To: ham-ant@ucsd.edu

In <27aetr\$de3@samba.oit.unc.edu> Ian.Cassell@launchpad.unc.edu (IAN CASSELL) writes:

>I am thinking of going HF mobile again and I have heard tell of a
>lightweight mobile antenna called the hamstick. Does anyone know anything
>about it? Who makes it, is it any good, etc.
> 73/Ian WY3W
>Ian.Cassell@launchpad.unc.edu

Hi Ian:

Well, I don't have the ad handy, but you can find them in QST, CQ, etc., I believe. They are cheap (\$17 each?) and mono-band. They are light and flexible. They are easy to mount and tune. I love the little things. I have lots of QSO's with them. I have other mobile antennas, like the Webster bandspanner and the bugcatcher, and they probably send a little more RF out into the air instead of heat, but the hamstick is just so darned convenient and it works well enough for me!

I like the cheap and workable aspect. If you check the stats on the popular expensive mobile HF antennas, the most expensive (the outbacker) turns out to have very low field strength in tests compared to even the much maligned Hustler. They all "work" though. Pick up a hamstick. Find out if you need more. Only \$17 used up, and you can always use it in a pinch.

Clark

.....

Clark Savage Turner, Graduate Student Researcher
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(714) 856 4049 (714) 856 2131

WA3JPG, QRP #3526, active on HF, VHF and UHF.
Admitted to practice law in California, Massachusetts, and New York.
ARRL Volunteer Counsel

Date: 17 Sep 93 14:21:57 GMT
From: ogicse!henson!netnews.nwnet.net!raven.alaska.edu!news.acns.nwu.edu!
casbah.acns.nwu.edu!rdewan@network.ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

In article <CDH2Kz.1rL@spk.hp.com>, Marc DePaul <depaul@spk.hp.com> wrote:
>Man, you have just hit a chord with me!

>

>I've used several different variations of the horizontal loop...When
>properly installed, they work GREAT!

>

>When I lived in PA, I came across a guy who had the loudest signal on the
>band (on 40 M), night after night. He lived in MD (I think) and was
>consistently 20 to 40 db stronger than any ham on the band (yes, look at
>those numbers again). He was using a horizontal loop (LP) mounted 40
>feet off of the ground. He mentioned that the antenna was specifically
>designed for extremely high angles of radiation. I gave the antenna a try,
>but I didn't use one wavelengths worth of wire on 40, it was more like 2
>1/2. I found that they worked DX nicely, but really favored the locals.

My experience has been different. It is partly because I am primarily
interested in DXing.

The first antenna that I put up was a 80m full wave horizontal loop
up 22 feet. I have analyzed it using mininec and compared it with
dipoles 80m up 50', GAP Voyager IV (45' tall 160, 80, 40 and 20m),
Cushcraft AP8 elevated 15' with 4 sets of groundplanes (for each of
the major bands).

For low angle DX work, the AP8 beats the socks off the loop on all
the bands. The loop is much too low and both theoretical modeling and
A/B comparison with antennas reveal its inadequacy.

The GAP beats the loop on all the bands that it works on.

>

>Many years later I put up a 560' horizontal loop which was mounted 5' off
>of the ground. This was when I moved to WA. California TX/RX was wonderful
>on 20 meters...Often the reports would go 30 over S 9, both ways. On 15
>meters, there were times when the JA's would say that I was the only US
>station they heard. (This was always when the band was closing out...what

>I call the "magic hour".) Mostly though I could hear stations, especially
>DX, much better than they could hear me...except for the 15 meters "magic
>hour" times.
>

This is interesting. Hmm. A 160m full wave loop low to the ground. I will
have to model it in NEC to see how it behaves on 20 thru 10m.

>The loop is a very low noise antenna. With my balanced antenna tuner, it
>was a joy to tune up on all bands. For 160 meters, it played wonderfully.
>I could get out as well as I heard. I kept thinking how wimpy some of the
>hams were complaining about the noise, when my noise was usually below an
>S 2. Now, with a vertical I can see what they mean!!

I have read this in the antenna book too. How can an omnidirectional antenna
have "low noise" characteristics without changing gain? If I compared
a horizontal loop with a vertical antenna which is tailored to have the
same gain as the loop, why would the loop have lower noise? The only
explanation can be the fact that if the noise source is *within* the loop
its contribution to the antenna may get cancelled out. Is this significant?

>
>I had to take it down because it really DIDN'T make the backyard look nice!
>
>I got cute and stapled the same size antenna around on my wooden fence, and
>up on the roof of the house to make it invisible...but it turned out to be
>a worthless antenna... I'm still thinking about putting up the loop again,
>but who knows.
>
>I just heard a ham this morning on 40 meters give a comparison of his loop
>vs his vertical. The guy talking to him noticed a 10 db increase in signal
>with the loop. I wasn't paying attention to the S meter to say either way.
>
>My attitude is: Have a variety of antennas up...propagation is a funny
>thing. My reality is: I can't do this right now, unless I wanted to further
>"junk up" the backyard!
>

Indeed. Variety is the spice of life.

>I hope this helps!

Indeed.

Rajiv
aa9ch
r-dewan@nwu.edu

Date: Fri, 17 Sep 1993 00:26:59 GMT
From: galaxy.ucr.edu!library.ucla.edu!agate!spool.mu.edu!sdd.hp.com!hp-cv!hp-pcd!
hpspkla!depaul@network.ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

Man, you have just hit a chord with me!

I've used several different variations of the horizontal loop...When properly installed, they work GREAT!

When I lived in PA, I came across a guy who had the loudest signal on the band (on 40 M), night after night. He lived in MD (I think) and was consistently 20 to 40 db stronger than any ham on the band (yes, look at those numbers again). He was using a horizontal loop (LP) mounted 40 feet off of the ground. He mentioned that the antenna was specifically designed for extremely high angles of radiation. I gave the antenna a try, but I didn't use one wavelengths worth of wire on 40, it was more like 2 1/2. I found that they worked DX nicely, but really favored the locals.

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My attitude is: Have a variety of antennas up...propagation is a funny thing. My reality is: I can't do this right now, unless I wanted to further "junk up" the backyard!

I hope this helps!

Marc DePaul

Date: 17 Sep 93 17:14:19 GMT
From: ogicse!hp-cv!hp-pcd!hpspkla!depaul@network.ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

Hello Rajiv.

The horizontal loop is much, much lower noise because it is horizontal (man made noise is vertical in polarization), and I feel it's because the antenna is a very low Q circuit. One thing I also need to say is that the loop was gently tilted up (one side was up at 20 ') towards the west.

The SWR was 1:1 across all of the bands, including 160 M.

I wouldn't put all of my faith in antenna computer programs...they always claim that the horizontal antenna is only good for very high angles of radiation...nonsense! It's hard to model in a suburban environment, although through the years of using a horizontal loop I can say it hears DX much better than it speaks! (Most of the times.)

Hey, for \$30 or so, they're hard to beat!

With Regards,

Marc DePaul

(Right now I'm using a sloper...I can't believe how directional they are...for me around 10 dB difference when I move it at 90 degrees from the station.)

Date: 17 Sep 93 21:04:12 GMT
From: hayes!bcoleman@uunet.uu.net
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

In article <9309141953.AA23289@chinalake.navy.mil>,
MUSCHINSKE%39A.DEcnet@sunman.chinalake.navy.mil writes:

>
> Does anyone have any experience with full wave horizontal loop antennas?
> I am interested in data, anecdotes, stories, tall tales, etc., on these
> antennas. I am ESPECIALLY interested in anyone who has used a 160m
> full wave horizontal loop.

I used a 80m full wave horizontal loop at my station for about 3 years. Mine was 270' of 18 ga stranded insulated wire about 15' up. Fed with RG-8x coax.

It tuned up nicely on all bands with a simple tuner. Performance was OK. Although the static levels were low, the signal levels weren't stupenduous either. 80m performance close in was real good. 40m as well. Higher bands worked, but not as well as a tribander (of course). I mostly used the antenna on 80 and 40.

I did have one problem go undetected for a few days when the coax center conductor worked loose. Antenna would tune up on the tuner, but signal levels were WAY down. Fixed that one quickly.

Basically, the antenna has a rather high angle of radiation this close to the ground. OK for nearby work, but not real good for DX. Ground losses are also enormous. Putting it further off the ground helps, but you need four supports to do that. Loop also has a somewhat lower impedance than a dipole at multiples of the fundamental, so it could be easier to match with your tuner.

I finally took it down about 3 years ago. I have a 125' doublet at 45' instead. The doublet works better than the loop, but it is much higher. Since it only requires two supports (or one for an inverted V) a doublet seems to be a much better choice than the loop.

--
Bill Coleman, AA4LR ! CIS: 76067,2327 AppleLink: D1958
Principal Software Engineer ! Packet Radio: AA4LR @ W4QO
Hayes Microcomputer Products, Inc. ! UUCP: uunet!hayes!bcoleman
POB 105203 Atlanta, GA 30348 USA ! Internet: bcoleman%hayes@uunet.uu.net
Disclaimer: "My employer doesn't pay me to have opinions."
Quote: "The same light shines on vineyards that makes deserts." -Steve Hackett.

Date: 17 Sep 93 14:48:41 GMT
From: ogicse!uwm.edu!vixen.cso.uiuc.edu!sdd.hp.com!col.hp.com!fc.hp.com!
goris@network.ucsd.edu
Subject: Kill the Rubber Duck!
To: ham-ant@ucsd.edu

ritterbus001@wctsub.ctstateu.edu wrote:

: I have a RS HTX202, and several people have suggested that I get rid
: of the rubber duck, and get a "real" antenna.

All antennas have their purpose... I have 3 different antennas for my HT:
the original rubber duck, a medium sized flexible dual-band (144/440)
antenna (Larson RH-77), and a 2M half-wave (AES hot-rod). I take which ever
one I think I'll need for a particular trip - sometimes I don't want
something fragile or bulky (so I take the duck)...sometimes I want lots of
gain...and sometimes I want good dual-band performance. HT antennas aren't
that expensive, anyway.

: 1) Would any telescoping antenna, extended to feet = $468 / 144$ Mhz be an
: end-fed halfwave, and work correctly without further ado?

Not very well. The impedance out of your radio is 50 ohms. The input
impedance to an end-fed half-wave is very high (>600 ohms...but I don't
know the exact number). You need something to match the impedance. That is
the do-hickey at the bottom of the AES-hot rod (HR1?). This is a great
antenna, by the way, and I highly recommend it. If you're rolling your
own, the best way to match your 50-ohm radio to the high-impedance
end-fed half-wave is with a matching stub, like the J-pole. Read all
about the J-pole elsewhere in this group - there's a lot of recent postings.
All a J-pole is, is an end-fed 1/2 wave antenna. The bottom 18-20 inches
or so is just a matching section, although it looks like part of the
radiating part of the antenna.

: 2) Would the same antenna, shortened to feet = $234 / 144$ Mhz work as
: a quarterwave?

Yes

: Is a groundplane required?

Yes. Quarter-wave and 5/8-wave verticals need a groundplane for good
performance. One trick I've read about for an HT antenna is to attach
4 telescoping sections to the ground on you HT's BNC connector. When
transporting the antenna, they're folded up next to the 1/4-wave telescoping
section (so you have 5 telescoping pieces). When you're ready to use the
antenna, you fold down the 4 ground radials and extend them, and extend the
antenna, and voila... a 1/4 wave with 4 ground radials.

I much prefer and end-fed half-wave.

: Or am I fooling myself, and should I just go buy an antenna designed
: for 2m work (but it's so much more satisfying to roll my own :-)

You hit the nail on the head...what is your time worth, and do you enjoy
rolling your own? I do both. I purchased a number of antennas that

are rugged, have good gain, and don't require any messing with. I also love playing with antennas, so I bought an SWR meter, and 2 antenna modeling packages (ELNEC and YAGIMAX), and I play with antennas as a hobby. My next purchase (or construction project) will be a field strength meter.

It's just like the weekend mechanic who keeps a '57 Chevy and a Ford Taurus in his garage. One is for tinkering around with, learning about cars, and having fun. The other is a reliable means of transportation. I bet you never thought a rubber-duck antenna was like a Ford Taurus, did you? :-)
HMMMMM.

---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---
Andy Goris
AA0CM
goris@fc.hp.com

"The undiscerning mind is like the root of a tree, absorbing all that it touches...even the poison that would kill it."

---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---. ---

Date: 17 Sep 93 04:31:25 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!cs.utexas.edu!not-for-mail@network.ucsd.edu
Subject: mininec3 manual required
To: ham-ant@ucsd.edu

In article 3Cq@bailgate.gpsemi.com, andy_w@sn4715.oldham.gpsemi.com (Andy Wright) writes:

>Does anyone know where I can get a copy of the MININEC3 antenna program manual?
>I have managed to get a copy of the software but there is no documentation
>with it. If anyone could e-mail it to me it would be appreciated, as I don't
>have ftp privileges.
>
>Thanks Andy Wright G40JY
> e-mail andy_w@oldham.gpsemi.com

Are both the source AND the manual of Mininec3 available via ftp? Is it public domain stuff? If so, would anybody mind to send me a pointer to the ftp site where I can get it?

Thanks a lot in advance,

Avi Plotnik 4X6LP
e-mail avip@acri.fr

Date: 17 Sep 93 17:16:35 GMT
From: ogicse!news.tek.com!tekig7!tekig6!royle@network.ucsd.edu
Subject: mininec3 manual required
To: ham-ant@ucsd.edu

Article 833 of rec.radio.amateur.antenna:
>andy_w@sn4715.oldham.gpsemi.com (Andy Wright):

>Does anyone know where I can get a copy of the MININEC3 antenna program manual?
>I have managed to get a copy of the software but there is no documentation
>with it. If anyone could e-mail it to me it would be appreciated, as I don't
>have ftp privileges.

>Thanks Andy Wright G40JY
> e-mail andy_w@oldham.gpsemi.com

The MININEC manual is

The New MININEC (Version 3): A Mini-Numerical Electromagnetic Code,
by J.C. Logan and J.W. Rockway, Naval Ocean Systems Center, San Diego,
CA (NOSC Technical Document TD 938)

It can be ordered as NTIS document number ADA181682 from

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

It's a highly technical manual, consisting mostly of an explanation of
the math and comparisons of MININEC to published antenna measurements.
A good article by R.P. Haviland on using MININEC was published in the first
issue of Communications Quarterly. If you or your library doesn't have it,
you may be able to get a copy from CQ Communications in Hicksville, NY,
the publisher. Sorry I don't have the phone number here at work.

Roy Lewallen, W7EL
royle@tekig6.pen.tek.com

Date: 16 Sep 1993 15:16:50 GMT
From: ftpbox!mothost!white!delphinium.rtsg.mot.com!rtsg.mot.com!kayjc@uunet.uu.net
Subject: When phones transmit (Was Health Risks)

To: ham-ant@ucsd.edu

OK, a brief description:

When you turn a cellular phone on it searches for the strongest control channel transmitted by the surrounding base stations. On most systems, the phone will "register" by transmitting a short burst of data on the control channel receive frequency. The phone will periodically reregister (as little as every few minutes) as it moves around the system or enters different systems. This helps the system efficiently "find" the phone to alert it of an incoming call.

Once a call is established, in most urban environments where cells are close together, the mobile is told to power down to help limit interference (also extended battery life for portables ;)). In reality in most cities your phone is transmitting well below its maximum power out.

Any other questions?

--

John C. Kay
kay@motcid.rtsg.mot.com
Amateur Radio Callsign WV9T

Motorola
Cellular Infrastructure Group
Arlington Heights, IL

End of Ham-Ant Digest V93 #51
